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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/711,396	09/16/2004	Emmanuel Rioufol	68.0504	5395

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EXAMINER	
COY, NICOLE A	
ART UNIT	**PAPER NUMBER**
3672	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/14/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/711,396	RIOUFOL ET AL.	
	Examiner	Art Unit	
	Nicole Coy	3672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 December 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10 and 13-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10,13-35 and 3839* is/are rejected.

7)☒ Claim(s) *36,37* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 22-37 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 22 recites the one or more sensors being connected to a plurality of sensing locations by one or more dedicated snorkel lines. It appears from the specification that the pressure gauges communicate with the interior of the tubing via the snorkel line. It is unclear from the specification, how the sensors are connected to a plurality of sensing locations by a snorkel line. It is also unclear how one sensor can be connected to a plurality of sensing locations or how more than one sensor can be connected to a plurality of sensing locations.

Claim Objections

3. Claims 22-37 are objected to because of the following informalities: Claim 22 recites "adapted to measure a characteristic of a supply," and it is unclear what that means. Applicant is recommended to amend to include that the it measures a characteristic of a fluid supply for clarity. Appropriate correction is required.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claims 1-15, 20, and 21 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 1 does not result in a physical transformation nor does it appear to provide a useful, concrete and tangible result. Specifically, it does not appear to produce a tangible result because merely measuring and comparing a characteristic is nothing more than a thought or a computation within a processor. It fails to use or make available for use the result of the comparison to enable its functionality and usefulness to be realized. The practical application is not explicitly recited in the claims nor does it flow inherently therefrom.

The locating step at the end really does not provide a practical application of the judicial exception, i.e. the comparing step. It could be the very first step. And the fact that the comparing is done on the output of the sensors as amended does not make the result any more tangible. It may make the input "real world" but that doesn't guarantee a real world output. The "useful, concrete, tangible" test is with respect to the result or output.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 22, 24, 25, 27, 29-33, 35, 38 and 39 are rejected under 35 U.S.C. 102(b) as being anticipated by Tubel et al. (2003/0131990).

With respect to claim 22, Tubel et al. discloses a sensor system of one or more sensors (120; see figure 2) adapted to measure a characteristic of a supply (see page 5 paragraph [0053]) and adapted to measure the characteristic in or near a downhole tool at a position that is spaced from the supply measurement (see figure 2, wherein there are multiple sensors spaced apart from each other), the one or more sensors (120) being connected to a plurality of sensing locations by one or more dedicated snorkel lines (122).

With respect to claim 24, Tubel et al. discloses a first sensor (120) adapted to measure the characteristic of a supply (see page 5 paragraph [0053]); a second sensor (120) adapted to measure the characteristic in or near the downhole tool (114), the second sensor (120) measuring the characteristic at the position that is spaced from the supply measurement (see figure 2, wherein there are multiple sensors spaced apart from each other).

With respect to claim 25, Tubel et al. discloses that the second sensor (120) is positioned external to the downhole tool (see figure 2).

With respect to claim 27, Tubel et al. discloses a control line (110) in fluid communication with the downhole tool (114) and the supply (130); the second sensor

(120) is adapted to measure the characteristic in the control line (see page 5 paragraph [0053]).

With respect to claim 29, Tubel et al. discloses that the second sensor (120) is further adapted to measure the characteristic of the supply (see page 5 paragraph [0053]).

With respect to claim 30, Tubel et al. discloses that the source is a downhole source (see figure 2).

With respect to claim 31, Tubel et al. discloses that the characteristic is pressure (see page 5 paragraph [0053]).

With respect to claim 32, Tubel et al. discloses that the one or more sensors are pressure gauges (see page 5 paragraph [0053], wherein a pressure sensor is a pressure gauge).

With respect to claim 33, Tubel et al. discloses a completion tubing (108); the downhole tool (114) comprises a packer (see page 5 paragraph [0053]) connected to the completion tubing (see figure 2), the packer having a setting chamber (wherein packers inherently have setting chambers.

With respect to claim 35, Tubel et al. discloses a packer setting line (110) in fluid communication the packer setting chamber (see figure 2); the sensor system comprises a sensor (120) adapted to measure the characteristic in the packer setting line (see figure (see page 2 paragraph [0012]).

With respect to claim 38, Tubel et al. discloses a well completion system, comprising: a completion tubing (108); a packer (114) connected to the completion

tubing (see figure 2), the packer having a setting chamber therein (wherein the packer inherently had a setting chamber); a packer setting line (110) providing fluid communication between the completion tubing and the packer setting chamber (see figure 2); an in-line control valve to control production through the completion tubing (see page 2 paragraph [0017], wherein Tubel et al. discloses that there is a valve downhole in the completion tubing); pressure gauge (120) adapted to measure a pressure in the packer setting line (see figure 2; wherein a pressure gauge is a pressure sensor).

With respect to claim 39, Tubel et al. discloses a second pressure gauge (120) adapted to measure a pressure in the completion tubing (see page 2 paragraph [0017]).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 1-10,13-21, 26, 28, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tubel et al. (2003/0131990) in view of Schultz et al. (2004/0060696).

With respect to claim 1, Tubel et al. discloses a method for use in a well, comprising: measuring a characteristic of a supply of fluid used to actuate a downhole tool via a control line, the measuring being accomplished with a first sensor (see page 5 paragraph [0053]); measuring the characteristic with a second sensor(see page 5

paragraph [0053]) in or near a downhole tool (114; see also page 5 paragraph [0054]) and spaced from the supply measurement (see page 5 paragraph [0053], wherein the plurality of sensors are spaced apart); comparing the measurements output by the first and second sensors to determine whether fluid is properly supplied to the downhole tool (see page 5 paragraphs [0049] and [0055]). Tubel et al. discloses that the step of measuring the characteristic in or near the downhole tool (114) comprises measuring the characteristic in a control line (110) that is in fluid communication with the downhole tool (see figure 2) and that the step of measuring the characteristic of the supply is performed using a first sensor (120) and the step of measuring the characteristic in or near the downhole tool is performed using a second sensor (120; see figure 2 wherein there are multiple sensors). Tubel et al. does not disclose locating a sensor, for measuring the characteristic in or near the downhole tool, separate from the control line used to actuate the downhole tool. Schultz et al. discloses a sensor located within a packer, which is separate from the control line. It would have been obvious to modify Tubel by including a sensor locating within a tool as taught by Schutlz in order to monitor how the packer element reacts to the packer setting operation and how the various downhole conditions affect the packer.

With respect to claim 2, Tubel et al. discloses verifying a function of the downhole tool (114) using the comparison (see page 2 paragraph [0012]).

With respect to claim 3, Tubel et al. discloses verifying that the downhole tool has set using the comparison (see page 2 paragraphs [0012] and [0015]).

With respect to claim 4, Tubel et al. discloses verifying that a fluid from the supply is reaching the downhole tool (see paragraph [0053], wherein the sensor is measuring pressure which inherently shows whether the supply is reaching the downhole tool).

With respect to claim 5, Tubel et al. discloses measuring a characteristic within the downhole tool (114) using a sensor (120) that is external to the downhole tool (see figure 2).

With respect to claim 6, Tubel et al. discloses that the source is a downhole source (see figure 2).

With respect to claim 7, Tubel et al. discloses that the source is positioned at a surface of the well (see figure 2).

With respect to claim 8, Tubel et al. does not disclose that the step of measuring is performed using a sensor located within the downhole tool. However, Schultz et al. teaches embedding sensors in a packer in order to monitor how the packer elements react to the packer setting operation and, after the packer is installed, how the various downhole conditions affect the packer. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Tubel et al. by including sensors in the packer as taught by Schultz et al. in order to monitor how the packer element reacts to the packer setting operation and how the various downhole conditions affect the packer.

With respect to claim 9, Tubel et al. discloses that the step of measuring the characteristic in or near the downhole tool (114) is performed using a sensor (12) located externally to the downhole tool (see figure 2).

With respect to claim 12, Tubel et al. discloses measuring the characteristic of the supply with the second sensor (120; see figure 2 and page 2 paragraph [0012]).

With respect to claim 13, Tubel et al. is silent as to the type of sensors used. However, differential sensors are well known sensors in the wellbore art. It would have been obvious to one having ordinary skill in the art at the time of the invention to use a differential sensor in order to measure the difference in a characteristic of a well.

With respect to claim 14, Tubel et al. discloses that the characteristic is pressure (see page 5 paragraph [0053]).

With respect to claim 15, Tubel et al. discloses deploying mitigation measures based upon the comparison (see page 2 paragraph [0012]).

With respect to claim 16, Tubel et al. discloses inserting the downhole tool (114), comprising a hydraulically set packer connected to a tubing (see page 5 paragraph [0054], wherein 114 is connected to tubing 108), into the well (102); providing fluid communication from an interior of the tubing to a setting chamber of the packer via a packer setting line (110); the measuring a characteristic of the supply step comprising measuring a pressure of the interior of the tubing near an inlet to the packer setting line (see figure 2, wherein sensor 120 measures pressure).

With respect to claim 17, Tubel et al. discloses measuring the pressure in the packer setting line (110; see figure 2, wherein sensor 120 measures pressure in setting line 110).

With respect to claim 18, Tubel et al. does not disclose that the step of measuring is performed using a sensor located in the setting chamber of the packer. However, Schultz et al. teaches embedding sensors in setting chamber of a packer in order to monitor how the packer elements react to the packer setting operation and, after the packer is installed, how the various downhole conditions affect the packer. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Tubel et al. by including sensors in the setting chamber of the packer as taught by Schultz et al. in order to monitor how the packer element reacts to the packer setting operation and how the various downhole conditions affect the packer.

With respect to claim 19, Tubel et al. discloses measuring a tubing pressure via the packer setting line (110; see page 2 paragraph [0017]).

With respect to claim 20, Tubel et al. discloses that the downhole tool is hydraulically actuated (see page 5 paragraph [0053]).

With respect to claim 21, Tubel et al. discloses that the downhole tool is a packer (see page 5 paragraph [0053]).

With respect to claim 26, Tubel et al. does not disclose that the step of measuring is performed using a sensor located within the downhole tool. However, Schultz et al. teaches embedding sensors in a packer in order to monitor how the packer elements react to the packer setting operation and, after the packer is installed,

how the various downhole conditions affect the packer. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Tubel et al. by including sensors in the packer as taught by Schultz et al. in order to monitor how the packer element reacts to the packer setting operation and how the various downhole conditions affect the packer.

With respect to claim 28, Tubel et al. does not disclose that the step of measuring is performed using a sensor located in the internal chamber of the packer. However, Schultz et al. teaches embedding sensors in internal chamber of a packer in order to monitor how the packer elements react to the packer setting operation and, after the packer is installed, how the various downhole conditions affect the packer. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Tubel et al. by including sensors in the internal chamber of the packer as taught by Schultz et al. in order to monitor how the packer element reacts to the packer setting operation and how the various downhole conditions affect the packer.

With respect to claim 34, Tubel et al. does not disclose that the step of measuring is performed using a sensor located in the setting chamber of the packer. However, Schultz et al. teaches embedding sensors in setting chamber of a packer in order to monitor how the packer elements react to the packer setting operation and, after the packer is installed, how the various downhole conditions affect the packer. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Tubel et al. by including sensors in the setting chamber of the

packer as taught by Schultz et al. in order to monitor how the packer element reacts to the packer setting operation and how the various downhole conditions affect the packer.

10. Claims 23 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tubel et al.

With respect to claim 23, Tubel et al. is silent as to the type of sensors used. However, differential sensors are well known sensors in the wellbore art. It would have been obvious to one having ordinary skill in the art at the time of the invention to use a differential sensor in order to measure the difference in a characteristic of a well.

Allowable Subject Matter

11. Claims 36 and 37 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

12. Applicant's arguments filed 12/14/06 have been fully considered but they are not persuasive. With respect to the 112 amendments, Applicant's amendment has not overcome the rejection. As noted above, it is unclear how one or more sensors can be connected to a plurality of sensing locations.

With respect to the 101 rejection, as noted above, Applicant's amendment has not overcome the rejection. The locating step at the end really does not provide a

practical application of the judicial exception, i.e. the comparing step. It could be the very first step. And the fact that the comparing is done on the output of the sensors as amended does not make the result any more tangible. It may make the input "real world" but that doesn't guarantee a real world output. The "useful, concrete, tangible" test is with respect to the result or output.

With respect to the 102 rejections, Applicant argues that reference numeral 122 in the Tubel et al. reference is used to describe an optical fiber line rather than a snorkel line. However, a snorkel line is not defined in the specification and a search online does not reveal a definition. Thus, the Examiner assumes that a snorkel line is a line which connects two sensors, and thus the optical fiber of Tubel would be a snorkel line.

With respect to claim 38, the Applicant argues that Tubel does not disclose an in-line control valve. However, an exit valve would control production through a completion tubing.

With respect to claim 1, the Applicant argues that the Schultz reference provides no teaching regarding measurements of a characteristic of the supply of fluid, but rather simply teaches embedding sensors in a packer element to sense conditions of the packer element. However, Schultz is not being used for teaching the measurement of a characteristic of a supply of fluid, as Tubel et al. teaches this. Schultz is being used to teach sensors in a packer element to sense conditions of the packer element. As noted above, while Tubel does not disclose a sensor separate from the control, Schutlz does disclose sensor embedded in a tool. It would have been obvious to modify Tubel by including a sensor locating within a tool as taught by Schutlz in order to monitor how the

packer element reacts to the packer setting operation and how the various downhole conditions affect the packer.

Conclusion

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicole Coy whose telephone number is 571-272-5405. The examiner can normally be reached on M-F 7:30-5:00, 1st F off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on 571-272-6999. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

nac

William Neuder
Primary Examiner